

Appln No. 09/825,903

Amdt date January 13, 2005

Reply to Office action of September 28, 2004

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently amended) A method of determining a start of a transmitted frame at a receiver on a frame-based communications network, the method comprising:

providing a preamble format for the transmitted frame wherein a plurality of identical copies of a preamble symbol sequence are transmitted sequentially;

filtering a received transmitted frame using filter coefficients matched to the preamble symbol sequence to provide a correlation sequence;

computing a squared-magnitude of the correlation sequence;

low-pass filtering the squared-magnitude of the correlation sequence to provide a low-pass filtered correlation ~~signal~~~~low pass filtered signal~~;

delaying the low-pass filtered correlation signal to provide a delayed low-pass filtered correlation signal;

~~multiplying the delayed low pass filtered correlation signal by a first fixed predetermined threshold to provide a multiplied correlation signal;~~

comparing the multiplied delayed low-pass filtered correlation signal with the low-pass filtered correlation signal to provide a correlation difference indicator;

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comparing the correlation difference indicator with a first fixed predetermined threshold to provide a threshold compared correlation difference indicator;

detecting energy of the received transmitted frame and low-pass filtering the energy to provide a low-pass filtered energy signal ~~comparing detected energy to a fixed energy threshold to provide a threshold compared energy signal;~~

~~multiplying the low-pass filtered energy signal by a second fixed predetermined threshold to provide a multiplied energy signal;~~

comparing the ~~threshold compared~~ low-pass filtered correlation signal with the ~~threshold compared~~ multiplied low-pass filtered energy signal to provide a correlation peak indicator; [[and]]

comparing the correlation peak indicator with a second fixed predetermined threshold to provide a threshold compared correlation peak indicator; and

forming a logical-AND of the threshold compared correlation difference indicator and the threshold compared correlation peak indicator to determine a match/no match comparison indicative of the start of a transmitted frame.

2. (Currently amended) The method of Claim 1, wherein the filtering includes ~~low-pass~~ filtering the received transmitted frame using filter coefficients matched to the preamble symbol sequence to provide a ~~filtered received signal~~ correlation sequence and averaging a squared-magnitude of the correlation sequence ~~filtered received signal~~.

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3. (Currently amended) The method of Claim [[1]]2, wherein the filtering is linear matched filtering.

4. (Currently amended) The method of Claim [[3]]2, wherein the filter coefficients are a time-reversed complex-conjugated repeated preamble symbol sequence.

5. (Currently amended) The method of Claim 4, wherein the time-reversed complex-conjugated repeated preamble ~~repeated~~ preamble symbol sequence is a constant-amplitude zero-autocorrelation sequence.

6. (Original) The method of Claim 4, wherein the time-reversed complex-conjugated repeated preamble symbol sequence includes complex symbols drawn from a Quadrature Phase Shift Keying or 4-Quadrature Amplitude Modulation constellation.

7. (Currently amended) The method of Claim 4, wherein the time-reversed complex-conjugated repeated preamble symbol sequence includes 16 symbols repeated at least 3 times~~[[,]]~~ with every 4-symbol sub-sequence ~~of which being~~ having a constant amplitude, zero autocorrelation.

8. Cancelled.

9. Cancelled.

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10. (New) The method of Claim 1, wherein the low pass filtered correlation signal is multiplied by one or more predetermined factors.

11. (New) The method of Claim 10, wherein multiplication of the low pass filtered correlation signal by one or more predetermined factors is implemented by either additions only, or subtractions only, or by both additions and subtractions.

12. (New) The method of Claim 1, wherein the low pass filtered energy signal is multiplied by one or more predetermined factors.

13. (New) The method of Claim 12, wherein multiplication of the low pass filtered energy signal by one or more predetermined factors is implemented by either additions only, or subtractions only, or by both additions and subtractions.